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## Nutrition and Public Interest #4

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The following is a transcription of the Third Quarter 1974 issue of Dr. Royal Lee's *Applied Trophology* newsletter, originally published by Standard Process Laboratories.

## Nutrition and Public Interest #4

This article is excerpted, in part, from "The Case for Optimum Nutrition," published in November 1973 and quoted, by permission, from *Let's Live* magazine, Los Angeles, California 90006.

We believe this condensed article will aid you in explaining the essence of the proposed vitamin regulations to your patients. A copy of the entire proposed regulations may be obtained, at a minimal cost, from the Council for Responsible Nutrition, 1776 K Street NW, Washington, DC 20006.

"Vitamins have at least one distinguishing feature. About no other health substance is there today so much public certainty and so much scientific argument," began an article in *Look*, June 1, 1971. This argument is concerned with the fundamental approaches to research in biochemistry, physics, the practice of medicine, as well as cultural and basic lifestyles. Also concerned are various issues involving agriculture, food processing, education, industrial methods, transportation, and governmental agencies. By fitting all the puzzling pieces together scientific nutrition now seems to be forging ahead with new information regarding nutrients accepted by both scientist and human.

### Adequate Nutrition Questionable

Basically, we must answer the question: *Just how serious are today's food-related problems in relation to the body's food requirements?*

A recent survey for a group of large food companies determined that one out of five women admitted being concerned about their nutrition. This term "casual" was defined, "Other things often seem more important than food decisions on any given day. With just a little care, cost and healthfulness balance out in the end anyway." Nutrition will "take care of itself." A total of 49 percent put nutrition as no more than a secondary consideration, feeling that with "just a little judgment, you can be sure of a healthful diet."

Generally, the lay public relies on nutritional information from such sources as schools, medicine, science, and government. However, these messages, mostly data oriented, are presented in such a manner as to be extremely confusing. They do however reveal inadequacies in the products of our industrial environment evidenced will vary among different segments of the population, manifesting different social, cultural, and economic characteristics.[1]

How serious is "undernutrition"? Is it something that needs more definitive treatment?

"ITEM: Dr. Roger Williams, Professor of Biochemistry at the University of Texas and one of America's most distinguished biochemists and nutritionists, says that 'at every stage I have found this concept to be wholly applicable to the individual by laboratory experiment. That malnutrition—unbalanced or inadequate nutrition—at the cellular level should be thought of as a major cause of human disease seems crystal clear to me."

"ITEM: In an evaluation of research on human nutrition prepared by a joint task group of the U.S. Department of Agriculture, the State Extensions and the Land Grant Colleges, the report on 'Benefits from Nutrition Research' states categorically:

"'Most all of the health problems underlying the leading causes of death in the United States could be modified by improvement in diet....Death rates in most of these conditions were higher in the U.S. than in other countries of comparable economic development. And what are some of these causes of death and disability which could be modified by improvements in nutrition? Heart and vascular disease, infant mortality, early aging, arthritis, dental health, diabetes, kidney disease and cancer, to give only a partial list."

"The sad fact is that even the darkest pictures painted by these nutrition surveys are probably underestimating the seriousness of the problem. For they are based on a concept of adequate nutrition designed to protect only against the most extreme known effects of vitamin deficiency."

This concept was formulated over 50 years ago when a group of doctors meeting at Cambridge University concluded that it "must be regarded as definitely established" that deficiency diseases may result from diets low in certain vitamins and that these diseases can be prevented by the addition of articles containing these vitamins.

"This admission effectively marked the dawn of the science of nutrition as we know it, and that it was such a relatively short time ago gives some indication of why the science and the information that emanates from its established practitioners is in such a state of confusion at the present time.

"For nutrition is truly an infant science that has not yet found a home. It hangs somewhere along the tenuous line running from the brilliant and explosive discoveries of modern biochemistry and molecular physics to the somewhat nebulous but utilitarian arts of 'home economics' and 'food fads.'

"Where the physician and the practice of medicine fits on this line has been in flux for many years. In fact, to a great extent, the medical profession's position, attitudes and store of knowledge on nutrition today is both a microcosm of, and a state of the state of this country's health and eating habits."

#### Optimum Nutrition

"The present standard of adequate nutrition, as espoused by doctors, nutritionists and others—although no two experts agree in detail on what constitutes even this low standard—is, in fact, inadequate. What is emerging is the need for a new standard of optimum nutrition. Optimum nutrition is not 'minimum daily requirement,' or even being sure there is enough of a certain element. Through recent animal feeding tests we find it means the best possible diet for the best possible health over a period of time. It means not just avoiding and not quantity. A quality food can neither be in deficiency nor be in excess. According to Dr. Janet L.C. Tsau, it should be based on the 'electronegativity of the components of the food.'

"There is increasing concern that faulty nutrition lies at the root of most major disease syndromes to one degree or another. There is ample evidence that the American diet is in need of radical change.

"Not only is the 'average American diet' deficient in many respects, but there is strong evidence that there is no 'average' diet but a welter of varied diets, with factors of habit, cultural bias, food industry advertising, and many other reasons vary widely in nutritional value. There are also no 'average' Americans, but a wide variety of men, women and children whose nutritional needs vary even more widely than their diets. Among laboratory animals, which are carefully inbred to make them as similar to each other metabolically as possible, nutrient levels which provide for good growth and optimal health vary by as much as twenty- to thirty-fold from individual to individual. Each person's metabolic machinery is as individual to him as his fingerprints. Each of us requires somewhat different amounts of the same nutrients in order to enjoy the best possible state of health for the optimum period of time.

"Since the indications are strong that very few of us regularly consume a diet which is likely to contain the optimal levels for us of each of the various nutrients, and since medical science has not yet developed diagnostic procedures which would fully reveal our individual needs for the various nutrients, and since exactly how much of what we should consume, there is no rational alternative to allowing each person to decide for himself how much, if any, supplementation of his diet is necessary to make him feel his best.

"Since most vitamins and other micronutrients are both harmless and absolutely necessary to life, it seems that regular supplementation of the diet is an act of simple prudence which an informed government and an informed medical establishment would encourage."

### Art or Science

But, apparently, prudence in prevention has somehow been lost in the shuffle.

Why doesn't medical science approve and utilize nutrition to a greater extent? Of the various reasons, probably the most important is that nutrition is basically an art, not a science. It can seldom be measured by scientific laboratory tests upon which the modern medical doctor places so much reliance. It is a skill that must be perfected through experience. Like music, painting, and the other arts, nutrition necessitates a study of its rudiments in order that it may be more easily applied. Therefore, a nutritionist who is not familiar with biochemistry is essential, even though biochemistry in itself is insufficient to solve many practical nutritional problems. For instance, an artist must have perspective to draw a picture. Perspective is important, but its understanding does not make one an artist. It is the skill of the artist in adapting perspective to his art that is of greater concern.

Science looks at nutrition from the viewpoint of a microscope; the nutritionist sees the greater panorama provided by a telescope. Each instrument is very useful when used within its own scope. Nutrition is involved in other branches of science, such as agronomy, biology, medical and veterinary medicine and apparently others, in addition to biochemistry. It has become an integrated science with many facets of investigation. Although the art of nutrition boils its observable facts dates from antiquity, it is comparatively a skill that must be perfected in the entire fifty years ago when it was observed that something other than fats, carbohydrates, and proteins was necessary to maintain health. This led to the discovery of what some factors called "accessory food factors," and later "vitamines." The word vitamin is now used to describe some twenty substances found to be essential to human metabolism.

### Vitamins Important

"Abundant scientific research shows that normal nutrition cannot be maintained with a diet consisting only of purified proteins, carbohydrates, fats and minerals. Not only are vitamins essential, but the human body lacks the ability to manufacture any of them, and must be obtained ordinarily from the food. When circumstances prevent maintenance of a balanced diet, vitamin deficiencies result and can lead to diseases and/or debilities ranging from night blindness, rickets and scurvy to psychiatric syndromes and general malaise."

A good example of one not manufactured in the body, and constantly needed, is vitamin C. This need was demonstrated way back in the fourteenth century when Vasco da Gama's sailors, suffering from fatal fruits, lemons and oranges, supplied the cure for scurvy. Then, as now, lack of interest in nutrition allowed the discovery to be forgotten. It remained for Dr. James Lind, a surgeon with the British Navy, to rediscover the importance and value of citrus fruits as a cure for scurvy. However, his fellow doctors belittled the discovery when they cited evidence that they tried a navy with lemon juice and it failed because they deliberately boiled it for a time to insure purity. The loss of nutrient vitamin C by boiling is comparable to present-day food processing and loss of more essential nutrients. In continuing the scurvy story, it was not until Dr. Lind was granted permission to conduct his experiment. He found out that another citrus fruit, lime, was a better keeper on long sea voyages and had the same anti-scurvy effect. It is because of this compulsive rationing of limes that sailors in the British navy are often called lime-juicers or limies.

Further study seems to have been abandoned until 1884, when pioneer American biochemist Casimir Funk, in a study of "accessory food factors," induced multiple neuritis in pigeons by feeding a diet of polished rice. He found the curative substance in the rice polishings. The search for thiamine began. Dr. Funk's investigations led him to be called this subtle vitamaniac: vita, meaning life, and amine, representing a group of compounds formed by replacing one or more of the hydrogen atoms of ammonia by one or more organic radicals.

### Supplements

Since these original discoveries much has been learned about the various natural food sources of vitamins and their exceedingly important role in metabolism. Even though the human body does make some vitamins the amount may be too small to meet its needs. Also, vitamins like vitamin C, and others not manufactured in the body must be supplied.

The best supplementation has been found to be natural food that has been free of chemicals in its growth and subsequently not devitalized by the various processing methods of modern technology, both of which are known to cause nutrient deficiencies.

"While the best source of needed vitamins is in a 'proper' diet, what is 'proper' for one may not be 'proper' for another. Also, given the types of food available today, which often have a high calorie-to-nutrient ratio, and given the subjective nature of appetite, unplanned diet may not contain the nutrients necessary to an individual's health and planned may not necessarily be the best.

Too, the effect of many food substances and their exact requirement in the body is still a matter of intense study. However, we do know of the dependency in various combinations and the complex interplay of many of these factors in the metabolic processes. It has also been observed that the purified nutritional factors lack the multiplicity of enzyme production required for these reactions.

People generally are now taking more interest in food and diet and their relation to health than at any time previously. In fact, thousands have petitioned Congress to prevent what they believe to be a selfish monopolistic complex with possible dictatorial power to regiment their foodstuff.

#### The FDA vs. Vitamins and Other Foods

"After more than two years of formal hearings, the Food and Drug Administration in January of 1973 published proposed regulations aimed at restricting the public's use of vitamins, minerals and other food supplements. These were part of an extensive set of regulations related to the labeling and advertising of all foods that could bring about significant changes in marketing practices of the entire food industry and the nutritional attitudes of the American consumer.

"But these regulations are puzzling in that they go much beyond controlling such excesses—if, in fact, they would control the unscrupulous at all. It would seem that certain provisions would work against better nutrition at either the optimum or adequate level, rather than improving it. For instance, the regulations would:

1. Establish a standard of inferiority for dietary supplements of vitamins and minerals which sets minimum and maximum limits of potencies.
2. Prohibit the sale of any product exceeding permissible ranges as a dietary supplement and require that it be approved, labeled and marketed as a drug. As such, the product is subject to the procedures for the over-the-counter review and may be held at the manufacturer's plant.
3. Prohibit any claim that a diet of ordinary foods cannot supply adequate nutrients.
4. Prohibit the claim that transportation, storage or cooking of foods may result in an inadequate diet."

Two quotes from Dr. Williams are pertinent in light of the second provision. At a Food & Drug Law Institute conference on vitamins, he said:

"A basic distinction between nutrients—minerals, amino acids and vitamins—and typical drugs lies in their mode of action.

"Nutrients enter into metabolism by furnishing building blocks for the construction of the enzyme systems which make metabolism possible. Drugs do not do this, and if a substance acts constructively it must be a nutrient (or possibly a hormone) not a drug.

"Unlike nutrients which act as a team, drugs act individually by entering into and interfering with metabolic processes. This interference, hopefully, brings about changes that are favorable to man and unfavorable to his enemies.

"Another basic distinction between nutrients and typical drugs is the fact that nutrients are native to our bodies while drugs in general are foreign or alien substances."

And in his book *Nutrition Against Disease*, he said:

"The Food and Drug Administration is, in one sense, an enemy of bad weapons, because it scrutinizes new medicines to determine if they are judged safe. If not, the FDA prohibits their use. Unfortunately, in its zeal to restrict the use of what we have called essentially 'bad weapons' the FDA has not always differentiated between nonbiological drugs and the natural nutrients that are needed by the cells of our bodies. Doubtless some exploitation is taking place in the use of vitamins, amino acids, and minerals, and abuses obviously need to be corrected. But there is a world of difference between potentially harmful nonbiological drugs and innocent—if sometimes misapplied—nutrients. Even as nutrients taken in grossly excessive amounts can be toxic but when taken in reasonable quantities, they are solely constructive. This cannot be said of drugs that are foreign to our bodies. Alien chemicals and natural nutrients should not be treated alike, and if medical education were on the ball, they never would be.

"In issuing these regulations, the FDA seems to be supporting several assumptions that are in opposition to findings by the vast majority of the scientific community and, in several cases, by the very government of which it is a part:

1. That American eating habits and state of nutrition are such that the value of food supplements should be downgraded, an attitude inherent in the issuing of the regulations.
2. That significant nutrients are not lost in transportation, storage and cooking of foods.
3. That there is such a thing as an 'average or ordinary' person, and, therefore, an average nutritional need allowing the establishment of recommended daily allowances as limits on the potencies of dietary supplements.
4. That the FDA should limit the consumer's right to purchase foods in the quantities he wishes when no question of a danger to his health is at issue.

"It is expected that the forthcoming regulations will severely restrict the consumer's right to select whatever products he or she wants. There is clearly no basis for such action. If the consumer believes that there is a correlation between good health and proper diet, he should be able to buy such products which help assure that proper diet, as long as these are clearly and truthfully labeled.

"Granting the FDA's contention that there is 'confusion' in the marketplace over nutrition—as well as in the scientific community and the government, we might add—it must be said that this is the result of lack of scientific knowledge and must be solved by continued extensive research and information rather than government edict."

Although the art of nutrition is thousands of years old, from a scientific viewpoint it is less than a century old and may be compared to a "baby in the woods." Therefore, further scientific investigation and knowledge are indispensable to modern health progress.

It would seem that science loses its purpose when it is used to rule humanity instead of serving it.

As the man who said he never knew how wise his father was until he grew up, we today must realize that the biological sciences are in their infancy and it is probably unwise to look upon them as if we were viewing them from a mountaintop, when in reality we are only standing in the valley looking up for more guidance.

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